DOCUMENT RESUME

ED 458 191 SP 040 289

AUTHOR Thomas, Kelli R.; Lamson, Sharon L.; King, Andrew K.

TITLE Training Teacher Candidates To Create Web-Based Electronic Professional Portfolios.

PUB DATE 2001-02-00

NOTE 20p.; Paper presented at the Annual Meeting of the Association of Teacher Educators (81st, New Orleans, LA, February 17-21, 2001).

PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS Computer Uses in Education; Educational Technology; Elementary Secondary Education; Higher Education; Multimedia Materials; *Portfolios (Background Materials); Preservice Teacher Education; Student Teachers

IDENTIFIERS *Electronic Portfolios

ABSTRACT

This paper describes the processes undertaken by Central Missouri State University's Department of Curriculum and Instruction to prepare teacher candidates to create Web-based professional portfolios that represent progress and learning, highlighting critical elements needed to enable the successful incorporation of electronic portfolios into a teacher education program. This school's electronic portfolio is a collection of evidence and/or artifacts and reflective statements that demonstrate intellectual and professional development in relation to competency-based education program outcomes in a multimedia format. The program outcomes correlate with education courses, assignments, statewide teacher assessment, and accreditation standards. This paper examines portfolio format, student teacher training, expectations for content coverage within the electronic portfolio, and evaluation procedures. It also describes how the school deals with student and faculty anxiety about using electronic portfolios. Elements critical to success include aspects related to training, information dissemination, technical equipment, privacy, and support. (Contains 12 references.) (SM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

SCOPE OF INTEREST NOTICE
The ERIC Facility has assigned this document for processing to: SP
In our judgment, this document is also of interest to the Clearinghouses noted to the right. Indexing should reflect their special points of view. IR

ED 458 191

Training Teacher Candidates to Create Web-Based Electronic Professional Portfolios

Association of Teacher Educators 81st Annual Meeting
New Orleans, LA
February 17-21, 2001

Kelli R. Thomas, Ph.D.
Assistant Professor, Department of Curriculum and Instruction
Central Missouri State University
kthomas@cmsu1.cmsu.edu

Sharon L. Lamson, Ph.D.
Professor, Department of Curriculum and Instruction
Central Missouri State University
lamson@cmsu1.cmsu.edu

Andrew K. King
Instructor, Department of Curriculum and Instruction
Central Missouri State University
aking@cmsu1.cmsu.edu

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Andrew K. King
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

SP040289

BEST COPY AVAILABLE

Introduction

Professional portfolios have become increasingly common in teacher education programs and can serve many purposes. Portfolios provide a form of teacher candidate assessment that is authentic and dynamic which supports the documentation of the complexities of learning, growth, and development related to teaching practices overtime (Barton & Collins, 1994; Krause, 1996; Stowell, Rios, McDaniel, & Kelly, 1993). Portfolios are reflective in nature (Tierney, 1994) and encourage critical reflection about teaching (Wolf, 1992). Additionally, the creation of a professional portfolio invites the learner to take responsibility for his/her own learning (Krause, 1996; Ross, 1996).

Traditionally portfolios in teacher education programs have taken the form of notebooks or folders filled with paperwork representing the efforts of teacher candidates throughout their education programs. Several issues related to utilizing a "paper" format for portfolio construction are problematic such as storage of portfolios, cost of compiling, handling of and potential damage to portfolios, loss, and evaluation. This paper describes the processes undertaken by a university Department of Curriculum and Instruction to prepare teacher candidates to create web-based professional portfolios and highlights critical elements to enable the successful incorporation of electronic portfolios into a teacher education program. The expectations for content coverage of the electronic portfolios and evaluation procedures are also discussed.

At Central Missouri State University (Central) a web-based method for teacher candidates to record and organize portfolios that represent progress and learning has been developed. The utilization of electronic portfolios represents an effort to meet various goals. First, the use of electronic portfolios satisfies the accreditation requirement that institutions must comply with performance standards through the use of teacher candidate portfolios, as well as, a state requirement to keep student portfolios. Second, electronic portfolios enable self-assessment of progress and professional development for teacher candidates. Additionally, the electronic portfolio serves as a form of evaluation of teacher candidates within the early childhood, elementary, and middle school programs and impacts a candidate's progress in the program.

The electronic portfolio at Central is a collection of evidence and/or artifacts and reflective statements that demonstrate intellectual and professional development in relation to competency-based education program outcomes in a multimedia format. The program outcomes correlate with education courses, assignments, state-wide teacher assessment, and accreditation standards.

Early Childhood/Elementary/Middle School Outcomes

Teacher candidates at Central are expected to meet competency-based program outcomes that comply with Missouri professional education standards and national standards. The program outcomes are categorized into the following ten theme areas:

Valuing	Thinking
Communicating	Social Interaction
Classroom Environment	Organization/Structure
Curriculum	Professionalism
Technology	Global Understanding

Mastery of the program outcomes must be demonstrated by teacher candidates across three levels; experiential, application, and integration. For each program outcome, students must provide evidence through an electronic portfolio to demonstrate understanding of the outcome at the appropriate level.

The first level of understanding for the program outcomes is the experiential level, which, indicates that the candidate can demonstrate exposure to an outcome. Within the theme area of communication for example, a teacher candidate can satisfy the third communication outcome (CO-3) at the experiential level by recognizing a variety of reading and writing strategies and models.

The second level, the application level, indicates that the candidate has demonstrated mastery of applying the principles of an outcome in a

protected environment such as an education methods course. To meet CO-3 within the theme area of communication at the application level, the teacher candidate must demonstrate the use of a variety of reading and writing strategies and models.

The third level, the integration level, indicates that the candidate has demonstrated the ability to integrate the principles of an outcome into practice in a "real" professional setting. By using and promoting a variety of reading and writing strategies and models to meet student and professional needs, a teacher candidate demonstrates compliance with CO-3 at the integration level. Typically, although it is not always the case, teacher candidates progress through the levels sequentially first incorporating an artifact into the electronic portfolio at the experiential level and later replacing that artifact with another that demonstrates mastery at a higher level.

Why Electronic?

The world in which we now live is quite different from that of just a decade ago and is continually changing. One of the primary differences can be attributed to the advances in technology and the accessibility of electronic and web-based resources. It has been argued that while technology has fundamentally changed the way business is conducted in America's offices, factories, and retail establishments the impact in our schools in comparison has been modest (President's Committee of Advisors on Science and Technology (PCAST) 1997). Issues related to

how to effectively incorporate technology into curricula from preschool through college are at the forefront of educational discussions (The Holmes Group, 1995). Increasing the utilization of computers and technology in our country's schools requires that educators themselves understand and utilize various forms of technology (PCAST, 1997).

It is critical that teacher candidates have exposure to and training in the use of technology if its various forms are to be incorporated into classroom practices. Learning to create a professional portfolio in an electronic format is one way to provide teacher candidates with training in and exposure to utilizing technology. This was a primary reason for making the decision to require candidates to build their portfolios in a web-based electronic format rather than the more traditional paper format. Utilizing a multimedia format also allows for video and interactive evidence to be included demonstrating a teacher candidate's intellectual growth and professional development.

Other aspects of the decision to utilize the electronic format related to the issues of storing candidates' portfolios and accessibility to specific portfolios. Although there are computer hardware requirements and considerations associated with storing electronic portfolios, less physical space is required to store electronic portfolios than is required to store portfolios in a paper format. Additionally, accessing a particular teacher candidate portfolio or even a specific portion of a portfolio would generally be easier and less time consuming if portfolios are in a web-

based electronic format. Finally, there is a value effect for candidates that produce a portfolio accessible for multiple audiences and not just one entity, as well as, enabling the creator to use creative forms of communicating through various media formats (Corbett-Perez & Dorman, 1999).

Portfolio Format

Initially teacher candidates were required to compose an electronic portfolio using HyperStudio. Candidates were free to construct their own electronic portfolio formats and structures in the way they wished as long as required elements were included. The electronic portfolio was to contain artifacts that would address the program outcomes in the ten theme areas and reflective narratives written to explain how an artifact demonstrated mastery of the program outcome it addressed. The incorporation of some type of teaching artifact and written reflections are common elements of most professional portfolios for educators (Wolf, 1996). Types of evidence that are appropriate artifacts include personal data such as awards, resumes, transcripts; lesson plans and/or units; strategies used for instruction, assessment, and classroom management; video clips of work with children; samples of children's work; assignments from university courses; and documentation of civic, community, and professional participation. The reflective narrative to match each artifact should describe the artifact and explain, 1) why an artifact was selected to represent an outcome; 2) which outcome(s) are

mastered; and 3) how the specific artifact shows mastery of the outcome(s) indicated by the teacher candidate.

The lack of a standard format presented a significant obstacle to the purpose of creating a professional portfolio. With the first group of candidates to compile an electronic portfolio it became evident that a standardized portfolio structure and format would be advantageous not only to the teacher candidates creating portfolios but also to the faculty responsible for evaluating the portfolios. In fact, research has shown that effective construction of professional portfolios by teacher candidates requires specific information about procedures for building a portfolio (Kieffer & Faust, 1993; Wolf 1991). With out adequate support and feedback on the structure and composition of a professional portfolio teacher candidates run the risk of building a "scrapbook" portfolio that lacks self-reflection and true evidence of mastery of specific program outcomes and goals (Wolf, 1996). It was also determined that Netscape Composer was a better program for candidates to utilize for the creation of electronic portfolios than HyperStudio. Netscape Composer is a free program available for downloading from the Internet and is currently the program recommended for creating electronic portfolios at Central.

As a result of the frustration associated with the initial attempt at creating electronic portfolios, a template for candidates to use in creating portfolios was constructed using Netscape Composer. The standard format established for the portfolios through the template served to

facilitate a better candidate and faculty understanding of the expectations related to portfolio content. The template includes links to the education program outcomes at Central as well as, to state education standards. The first screen of the template contains a table of the ten program themes, which links to ten tables containing the program outcomes. The program outcome tables in the template have blank columns from which candidates create links to artifacts and reflective narratives that they have constructed for each outcome at the experiential level, the application level, and the integration level.

Training

Candidates are initiated into the process of building the electronic professional portfolios in the sophomore year. The portfolio is introduced and discussed in all education courses with attention to how course assignments fit within the program outcomes. In one of the first education courses taken by candidates, the initiation of the electronic portfolio is an actual course assignment. Candidates are trained in how to create a web-based professional portfolio, how to save materials for the electronic portfolio on a university server, how to select appropriate artifacts to address the program outcomes, and how to write a reflective narrative about the artifacts selected.

During the initial training, the candidates are made aware of the continuing requirements for the portfolios. Over the next three to four semesters the portfolios are refined and extended at ever-increasing

levels of complexity. In addition to the intense training offered in the first course, candidates receive training in two more courses throughout their education program. Additional training sessions are available for candidates outside of their required courses. These training sessions are scheduled as a one session additional training and support for candidates to attend in one of the university computer labs if they choose to take advantage of the opportunity. A web site has also been published for candidates to access for further support. The web site includes all training materials for review, a question and answer forum, sample electronic portfolios, and discussion boards (http://cehs.cmsu.edu/webstudent/portfoli/index.htm).

The portfolios are officially reviewed at three program benchmarks. At each of the reviews a decision is made as to whether or not the candidate will continue in the education program. Therefore, the electronic professional portfolio training is critical for candidate success and professional development in the education program.

Evaluation

The electronic portfolio is formally evaluated at three levels during the candidate's education program. At each level of evaluation, the candidate's portfolio must be presented with increasing content and level of complexity. With each of the formal evaluations a decision about the candidate's continuation in the education program is made based on the contents of the portfolio. A small team of faculty members from the

Department of Curriculum and Instruction evaluates each candidate's electronic portfolio. The electronic portfolio is rated at all levels of review on appearance, function, quality of artifact selection, intellectual elegance, depth of reflection, and completeness.

There are four possible ratings for the electronic portfolio at each level; 1) excellent, 2) satisfactory, 3) needs improvement, and 4) unacceptable. An excellent rating allows the candidate to continue in the program at the initial level, proceed to student teaching at the mid-level, and receive recommendation for certification at the final level of evaluation all with recognition of excellence. A satisfactory rating allows the candidate to continue in the program at the initial level, proceed to student teaching at the mid-level, and receive recommendation for certification at the final level of evaluation. A needs improvement rating indicates that the candidate may continue but must improve to a satisfactory rating before the end of the semester for enrollment in additional education courses, to student teach, or to be recommended for certification. With an unacceptable rating the candidate may finish the semester but must improve to a satisfactory level before enrolling for the next semester.

The initial formal review of the electronic portfolio generally occurs in the candidate's second or third semester of education courses around the end of the sophomore year or the beginning of the junior year. The initial formal review is conducted in conjunction with one of the required

education courses. It occurs at the time of recommendation into the teacher education program and impacts that recommendation. At this level of review the candidates are expected to present artifacts with reflective narratives to address twenty outcomes with at least one in each of the ten theme areas, mostly at the experiential level. Among the types of artifacts are lesson plans, a research paper, a philosophy of education paper, and a field experience reaction paper.

The mid-level formal review happens the semester before student teaching. The mid-level formal review is also conducted in conjunction with one of the required education courses. This review impacts the candidate's departmental recommendation for student teaching. Requirements at this level include addressing all program outcomes in ten of the ten theme areas supported by artifacts and reflective narratives. The outcomes at this review should be addressed mostly at the application level. Artifacts at this review should represent a higher level of understanding and complexity with the inclusion of artifacts related to strategies about instruction and assessment.

The final formal review takes place during student teaching, usually the month prior to the conclusion of the teaching experience. This review determines whether or not the candidate receives a recommendation for certification from the department. At the final review the candidate's portfolio should address all outcomes in ten of the ten theme areas at mostly the integration level. For this review artifacts

will most likely have been replaced with more complex indicators of mastery of the outcomes. Artifacts from the student teaching experience, a video clip of the candidate teaching, and classroom management strategies are examples of the types of artifacts included at the final level of review.

Although not representative of a formal evaluation of the electronic portfolios, candidates can use their portfolios as a form of self-assessment and evidence of their own professional development. Periodic self-review of the electronic portfolio is encouraged for candidates to monitor progress and identify areas that require increased attention through their educational experiences. The candidates are also encouraged to utilize a faculty mentor who is available to give guidance in the process of creating and revising the professional portfolio.

Student and Faculty Anxiety

The process of creating and evaluating web-based professional portfolios is not immune to candidate and faculty anxiety. Awareness and recognition of several elements related to the initiation and utilization of electronic portfolios can reduce anxiety and increase success. Among the concerns of candidates are the following:

- Level of technical proficiency
- How to effectively create an electronic professional portfolio
- Time required to create a professional portfolio
- Identifying appropriate artifacts to incorporate into the portfolio

- Writing quality reflective narratives to connect artifacts with program outcomes
- Developing confidence in the electronic format and the retrieval of the artifacts, reflective narratives, and the portfolios themselves.

Closely related to the concerns of candidates are the concerns of the faculty:

- Level of technical proficiency
- How to effectively evaluate an electronic professional portfolio
- Time required to evaluate a professional portfolio
- Determining the appropriateness of artifacts to address program outcomes
- Evaluating the quality and suitability of reflective narratives
- Developing confidence in the electronic format and the retrieval of the artifacts, reflective narratives, and the portfolios themselves.

Addressing these elements requires discourse and collaboration among candidates and faculty to successfully navigate the initial anxiety of creating electronic portfolios.

Lessons Learned and Critical Elements for Success

The process of implementing web-based professional portfolios into the teacher education program at Central revealed several elements that are critical for success. The elements include aspects related to training,

information dissemination, technical equipment requirements, privacy issues, and support issues.

Clearly, comprehensive training related to the construction of electronic portfolios is a key factor for reducing anxiety and frustration related to compiling and evaluating a web-based interactive portfolio. Training should be provided not only for teacher candidates but also for faculty that will provide support to candidates and evaluate candidate portfolios and to computer lab assistants that will encounter the portfolios through candidates' questions while working in the computer labs. Many teacher candidates and some faculty may lack experience working with various multimedia forums. Therefore, focusing one aspect of training on how to use various multimedia software, hardware, and equipment would be beneficial for those involved with electronic portfolios.

Another important aspect of training relates to how to select and evaluate appropriate artifacts and how to write and evaluate reflective narratives that demonstrate depth of understanding and critical thought. Identification of specific outcomes or goals to be met through the portfolio incorporated into training will help eliminate confusion surrounding what is appropriate for inclusion and what is not appropriate. Incorporating the training of candidates into a course and requiring the establishment of the electronic portfolio as a class assignment can be an effective strategy for facilitating teacher

candidates' efforts to build a web-based portfolio. Doing so allows for careful supervision and monitoring of candidates' progress reducing the risk of producing an unsatisfactory product for candidates.

Lack of information or understanding regarding the development of electronic professional portfolios presents an obstacle to a candidate's constructive effort toward building a portfolio. Informing candidates early and often of requirements and expectations for portfolio construction contributes to candidate success.

Additionally, informing cooperating teachers of the university's expectations for candidates, particularly student teachers, regarding the electronic portfolios contributes to positive relationships with schools. Continuous communication between teacher education faculty and cooperating teachers in schools about the role of each in supporting teacher candidates as they develop electronic portfolios reduces misunderstandings and enhances a positive collaboration with schools and the university.

Prior to implementing a full-scale requirement for candidates to utilize electronic portfolios evaluate software and hardware needs to support the construction and storage of web-based portfolios. Consideration of the types of multimedia to be incorporated into the portfolios is important and should not be overlooked. For example, including video clips and detailed graphics into portfolios may require extensive storage space. It is critical to ensure there is adequate server

space for storage of portfolios to avoid reaching server capacity and possible network collapse.

Finally, the process of learning to build a professional portfolio using a multimedia format requires ongoing change and development. Candidates' knowledge and understanding of the principles of teaching and learning becomes more complex as does their ability to represent that growth through multimedia formats. Faculty members develop a better understanding of how the process of constructing electronic portfolios can be utilized to demonstrate the professional development of candidates. Change in the content, the focus, or the format of the electronic portfolio is likely to be necessary as goals are changed or more efficient methods for construction are discovered. The evolving process can be frustrating to candidates and faculty involved. When undertaking the implementation of electronic portfolios, continue to focus on the benefits of utilizing the multimedia format for professional portfolios with the understanding that flexibility throughout the learning process greatly enhances the final outcome.

References Cited

Barton, J. & Collins, A. (1993). Portfolios in teacher education. Journal of Teacher Education, 44 (3), 36-44.

Corbett-Perez, S. & Dorman, S. M. (1999). Electronic portfolios enhance health instruction. Journal of School Heath, 69 (6), 247-251.

The Holmes Group (1995). Tomorrow's schools of education: A report from the Holmes Group. East Lansing, MI: The Holmes Group.

Krause, S. (1996). Portfolios in teacher education: Effects on preservice teachers' early comprehension of the portfolio process. Journal of Teacher Education, 47 (2), 130-138.

Kieffer, R. D. & Faust, M. A. (1993, December). Portfolio process and teacher change: Elementary, secondary and university teachers reflect upon their initial experiences with portfolio assessment. Paper presented at the meeting of the National Reading Conference, Charleston, SC.

President's Committee of Advisors on Science and Technology (PCAST). (1997). Report to the president on the use of technology to strengthen K-12 education in the United States. PCAST.

Ross, E. W. (1996). The role of portfolio evaluation in social studies teacher education: How evaluation practices shape learning experiences. Social Education, 60 (3), 162-166.

Stowell, L. P., Rios, F. A., McDaniel, J. E., & Kelly, P. (1993). Casting wide the net: Portfolio assessment in teacher education. Middle School Journal, 25 (2), 61-67.

Tierney, D. (1994, April). Teacher portfolios: Would an assessment by any other name smell as sweet? Paper presented at the annual meeting of the American Education Research Association, New Orleans, LA.

Wolf, K. (1991). The schoolteacher's portfolio: Issues in design, implementation, and evaluation. Phi Delta Kappan, 73, 129-136.

Wolf, K. (1992). Portfolio assessment: Sampling student work. Educational Leadership, 46 (7), 35-39.

Wolf, K. (1996). Developing an effective teaching portfolio. Educational Leadership, 53 (6), 34-38.